Remotely Operated Aircraft (ROA) Activities in NOAA

A Presentation to the
NOAA Science Advisory Board

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Purpose

- Overview of ongoing ROA efforts in NOAA
- Raise awareness about the possibilities of this rapidly evolving technology
- Need for partnerships with other gov't agencies, i.e. NASA, DOE & NSF
- Receive SAB feedback on future NOAA ROA efforts

Issue

- ROAs are a quickly evolving technology that may fulfill identified gaps with regard to NOAA requirements
- Should NOAA test ROAs to determine their potential contribution to its mission?
- Numerous gov't agencies currently using and investigating ROA possibilities – continue and expand NOAA's partnerships
- NOAA effort now being coordinated via ROA Working Group & Steering Committee

NOAA's Direction

- Develop a NOAA ROA Steering Committee (SC) and Working Group (WG) – first meeting held July 18th with Line Office and Goal Team reps (USAF and USN observers included)
  - Purpose (draft): A formal body to serve as NOAA's focal point for collaboration and information regarding the application of ROA technology in the accomplishment of NOAA missions.
  - Mission (draft): To make recommendations to NOAA's leadership on the application of ROA technology to fulfill research and operational data gaps in critical areas, such as weather and water, climate and ecosystem monitoring and management.

NOAA's Direction (cont)

- Single point of contact for ROA Activities across NOAA – LCDR Harris Halverson (NMAO), chair of NOAA ROA WG (LCDR Randy TeBeest – Dec '05)
- Require all NOAA ROA flights be executed through NASA with NASA co-sponsored FAA Certificate of Authorizations (COAs)
- Pursue partnerships with other Federal Agencies with common interests and requirements (NOAA/NASA/DOE MOA currently going through DOC legal approval process)
- Develop Senate Committee Report, in conjunction with NASA, "on the potential use of UAV's to operate in the near space environment for a variety of scientific and operational missions" (by 3/17/2006)
- Participate in ROA integration into the National Airspace System (NAS) - Access 5 & RTCA Special Committee 203

NOAA Remotely Operated Aircraft Flight Demonstration Spring/Summer 2005

- The ALTAIR, a high altitude version of the Predator B, was specifically designed as an unmanned platform for both scientific and commercial research missions.
- Built in partnership with NASA, the ALTAIR has an 86 ft wingspan, can fly up to 52,000 ft and can remain airborne for well over 30 hours.
- Marked as the first remotely piloted aircraft that will meet aviation authority requirements for unmanned flights in National Air Space.

Where is NOAA in the near term?

- Finish Altair Demonstration – August ‘05
- Develop NOAA lessons learned and evaluate NASA lessons learned from Altair demo – late August ’05 / early September ‘05
- Hold bi-weekly or monthly ROA Working Group telecons, as needed

Where does NOAA want to go next?

- Spring ’06 project on Altair in conjunction with NASA – NW Hawaiian Islands? (Funding & results of Altair demo tbd)
- NASA Global Hawk Air Vehicle-1 (AV-1). Likely acquisition Spring/Summer ’06. Monthly telecon’s with NASA Dryden are being held
- Observe USAF Weather Scout Aerosonde demo – August-November ’05 (Aug 8-12th tests @ Wallops / operational in Guam Sept-Nov)
- Continue to build interagency partnerships, i.e., NOAA/NASA/DOE/NSF - Nov ’05 workshop
- Navy CIRPAS (Monterey, CA) – owns 2 Predator A’s

NOAA Coordination & Views

- ROA WG recently established has broad membership across all NOAA Lines and Goals – guided by a Steering Committee
- Objectives of ROA WG are:
  - Coordination across NOAA & with other gov't agencies
  - Spread the word (inside and outside NOAA)
  - Source of technical expertise to NOAA decision makers
  - Make recommendations to NOAA leadership on potential uses for ROAs to fulfill observational gaps such as weather & climate prediction, ecosystem monitoring and enforcement, etc.
  - Investigate potential role of ROAs in support of GEOSS

Desired Outcomes

- SAB feedback on current approach to evolving ROA technology
  - Identify potential opportunities/challenges
  - Welcome suggestions for new partnerships
  - Affirmation of WG approach to investigating ROAs to fulfill gaps in NOAA's observational requirements